
An Analysis of

***An Economic Report to the Governor
of the State of Tennessee***

A Report to the State Funding Board

prepared by

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April, 2000

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Introduction

Each year the Center for Business and Economic Research (CBER) at the University of Tennessee publishes *An Economic Report to the Governor of the State of Tennessee*. The report contains forecasts for key economic variables and commentary on the extent to which changes in these variables may affect local, state and national economies. CBER uses the national economic forecasts of Wharton Econometric Forecasting Associates (WEFA) for its national-level data; the forecast and analysis for Tennessee are derived from the Tennessee Econometric Model (TEM). In addition, three other models are applied in the development of the agricultural component of the Tennessee economic forecasts.

The Tennessee State Funding Board is required by statute (see Appendix B) to comment on the reasonableness of the forecasted growth rate of the state's economy, as measured by the growth rate of nominal personal income in Tennessee. The forecasted growth rate is used as a basis for determining the potential increase in appropriations from state tax revenues for the next fiscal year. The purpose of this analysis is to assist the Tennessee State Funding Board in its consideration of CBER's forecasts for the Tennessee economy in 2000 by highlighting and elaborating on, and critiquing various points in CBER's report.

The next two sections of this report summarize CBER's forecasts for the U.S. economy (based on the WEFA forecasts) and the Tennessee economy, presenting those forecasts within a frame of other related economic trends and predictions made by other organizations. The concluding section highlights some key issues raised both by the CBER report and by other observations of the state's economy.

U.S. Forecast

Gross Domestic Product (GDP). CBER's forecast for average nominal GDP growth in 2000 is 4.3%. CBER's forecasts for nominal GDP growth in 2000 are on the low end of the spectrum of sampled forecasts. Its forecast for nominal GDP growth is nine-tenths of a percentage point below the average of the forecast sample.

CBER's forecast for average real (i.e., inflation-adjusted) GDP growth for 1999 is 3.8%, expected to decline to 3.1% in 2000 and then up again to 3.5% in 2001. Stronger growth indicated in the latter three quarters' forecasts is expected to bring up the annual average from an expected slow start early in 2000.

Forecast Comparison: 2000 Nominal GDP Growth	
Agency	Rate
First Union	6.5
Michigan-RSQE	6.4
Northern Trust	5.9
Philadelphia FRB	5.6
FannieMae	5.4
Dismal Scientist	4.5
CBER (WEFA)	4.3
CBO	4.3
Forecast Average	5.4
Forecast Range: Low	4.3
Forecast Range: High	6.5

Table 1

Real GDP Growth by Quarter: 1999-2000 (96\$)					
1999 Avg.	CBER (WEFA) Forecast				
	2000 Q1	2000 Q2	2000 Q3	2000 Q4	2000 Avg.
3.8%	1.0%	4.1%	3.1%	3.0%	3.1%

Table 2

Inflation. The inflation rate is expected to stay at its current low level in 2000. In 2000, CBER expects a 1.2% rate of inflation as measured by the Implicit GDP Deflator, and 1.6% as measured by the Personal Consumption Deflator.

CBER's forecast for the Implicit GDP Deflator is the lowest among the sampled forecasts, implying that other forecasters' estimates of real GDP growth are lower than those of CBER (shown on Table 2).

Forecast Comparison: 2000 Inflation (GDP Deflator)	
Agency	Rate
Michigan-RSQE	2.3
Northern Trust	2.2
First Union	2.1
FannieMae	2.0
CBO	1.9
Philadelphia FRB	1.8
CBER (WEFA)	1.2
Forecast Average	1.9
Forecast Range: Low	1.2
Forecast Range: High	2.3

Table 3

Unemployment Rate and Job Growth. The CBER forecast for U.S. unemployment in 1999 and 2000 are 4.2% and 4.4%, respectively. CBER expects slight increases in unemployment in 2001 and beyond, with U.S. unemployment forecast to rise to over 5.5% at the middle of the decade. CBER's forecast of 4.4% for U.S. unemployment in 2000 is the highest of the sampled forecasts.

Similarly, U.S. nonagricultural job growth is expected to decline from nearly 2.2% in 1999 to 1.2% in 2000, rising only slightly again in 2001.

Forecast Comparison: 2000 Unemployment Rate	
Agency	Rate
CBER (WEFA)	4.4
CBO	4.3
Michigan-RSQE	4.1
Dismal Scientist	4.0
Philadelphia FRB	4.0
First Union	3.9
FannieMae	3.9
Northern Trust	3.9
Forecast Average	4.1
Forecast Range: Low	3.9
Forecast Range: High	4.4

Table 4

Tennessee Forecast (and Recent Trends)

Gross State Product (GSP). CBER forecasts Tennessee's real GSP to have increased 2.7% in 1999, as compared to just over 3.8% for U.S. GDP. This projected GSP growth rate in Tennessee is significant decline from the 3.6% in 1998. CBER forecasts the Tennessee real GSP will rise slightly in 2000, growing 2.9%. CBER's forecasted U.S. GDP growth rate in 2000 is 3.1%.

Per-capita real GSP in Tennessee is expected to dip, however, to 1.6% in 1999 and 1.7% in 2000, rising above 2% again for the remainder of the decade. Per-capita real GSP growth in Tennessee is forecast at an average of 2.1% from 1999 to 2008, compared to the U.S. average per-capita real GDP forecast of 1.6% for that period.

Nominal Personal Income.

Similar to CBER's data, the Federal Reserve Bank of Atlanta showed fairly strong personal income growth in Tennessee for fiscal year 1998-99. However, the Atlanta Fed also showed Tennessee's personal income growth lagging behind both the Southeast and U.S. averages for that period.

CBER expects personal income in Tennessee to increase 5.0% (nominal) in 2000.

Comparatively, U.S. nominal personal income growth is projected to be 4.8% in 2000, down from a forecast of 5.7% for 1999.

The forecast for individual components of nominal personal income in 2000 indicates that proprietors' income will be the fastest growing component of personal income. CBER's ten-year annual forecast shows wages and salaries to be increasing in a relatively stable trend, generally

Annual Real GSP Growth: 1999-2001 (96\$) CBER Forecast		
1999	2000	2001
2.7%	2.9%	3.4 %

Table 5

Forecasted Tennessee Nominal Personal Income Growth: 2000 CBER Forecast	
Wages and Salaries	3.9
Other Labor Income	5.7
Proprietors' Income	6.9
Rent, Interest & Dividends	6.5
Transfer Payments	4.2
Total	5.0

Table 6

between 5% to 6% per year. Since that component comprises nearly 60% of total personal income, and since the second largest component of personal income (transfer payments) is expected to grow at similar rates, the CBER forecasts show a fairly steady increase in the growth of personal income over the coming decade. The long-term outlook is that overall nominal personal income will average 6% per year for the coming decade (through 2008).

Other Measures of Personal Income. CBER also forecasts growth estimates for other measures of personal income. For the purposes of projecting the capacity of income growth to support (through taxes) the state's fiscal needs, it makes sense to examine per-capita real personal income growth. That measure more accurately explains the growth in tax capacity (e.g. purchasing power) due to personal income growth by accounting for population growth and inflation. Table 7 shows that per-capita real personal income growth is projected to rise slightly from 2.1% in 1999 to 2.2% in 2000.

Different Measures of Tennessee Personal Income Growth		
CBER Forecast		
<i>Measure</i>	<i>1999</i>	<i>2000</i>
Nominal personal income	4.9	5.0
Inflation-adjusted personal income	3.3	3.4
Nominal per-capita personal income	3.7	3.8
Inflation-adjusted per-capita personal income	2.1	2.2

Table 7

Map 1 shows the distribution of per-capita personal income by county in 1997 (the most recent year for which county-level personal income data are available). Among other things, it shows that the highest per-capita personal income levels are in the four largest metropolitan areas, with the Middle Tennessee counties of Williamson and Davidson ranking first and second, respectively, followed by Shelby, Hamilton, Knox, and Madison.

Map 2 shows the nominal growth in per-capita personal income from 1996 to 1997. The five highest growth counties in that year, all with per-capita nominal personal income growth above 6%, were Hancock, Robertson, Perry, Henderson, and Pickett. The four lowest growth

counties in that year, all with negative per-capita nominal personal income growth, were Lewis, Lake, Maury, and Hardeman. Two of the possible explanations for this distribution of personal income growth are population and employment changes. A later section will delve further into the employment changes that have significantly affected changes in county-level incomes.

Personal Income Forecast Error. In 1999, CBER forecasted growth of 4.5% in nominal personal income; actual growth was 4.9%. This was the first year in five that CBER's forecast was below actual growth, though all forecasts from 1990 to 1994 were under actual personal income growth.

Given the experience through the end of 1999, CBER's 5.0% forecasted personal income growth appeared reasonable. However, it appears now to be a somewhat optimistic forecast given recent stock market jitters and continued Federal Reserve concern (and potential action) over inflation. Slow or declining housing starts and lower consumer confidence data also reflect a potential trend toward a slowing economy.

Tennessee Nominal Personal Income Forecast Errors: 1995-1999				
Year	Actual	Forecast	Error	% Error
1990	6.3	5.8	-0.5	-7.9%
1991	5.0	4.9	-0.1	-2.0%
1992	8.7	5.0	-3.7	-42.5%
1993	5.9	5.8	-0.1	-1.7%
1994	7.0	6.7	-0.3	-4.3%
1995	6.7	7.2	+0.5	13.4%
1996	4.7	5.8	+1.1	23.4%
1997	5.4	5.5	+0.1	1.9%
1998	4.9	5.1	+0.2	4.1%
1999	4.9	4.5	-0.4	-8.2%

Table 8

Sales Tax Base and Collections.¹ Per-capita taxable sales growth is generally fairly erratic, and that has certainly been the case in the last few years. Despite remarkably high projected growth in 1999, CBER projects 4.7% nominal total taxable sales growth and 3.1% real taxable

¹ Notice the distinction between taxable sales and sales tax collections here. Ideally, the taxable sales times the sales tax rate should yield sales tax collections. However, the two are not exactly correlated, since there are refund, credit, and exemption issues, in addition to data collection disparities and imperfect tax collections (e.g., from border leakage), that may differentiate the two measures.

sales growth in 2000.² Per-capita nominal taxable sales growth is projected at 3.5% in 2000, and per-capita real taxable sales growth at 1.9%.

Different Measures of Tennessee Taxable Sales Growth		
CBER Forecast		
<i>Measure</i>	<i>1999</i>	<i>2000</i>
Nominal taxable sales	8.7	4.7
Inflation-adjusted taxable sales	7.0	3.1
Nominal per-capita taxable sales	7.5	3.5
Inflation-adjusted per-capita taxable sales	5.8	1.9

Table 9

In general, forecasts for the coming decade show taxable sales growing between two-thirds and four-fifths of the rate of personal income. However, the combination of CBER's forecasts for personal income growth and taxable sales growth suggest sales tax elasticities at or near one for both 2000 and 2001. Given the last two years' experience of reversion to a low-elasticity system and given declining residential housing starts (which, in part, drive sales tax collections), CBER's forecasts for taxable sales growth appear to be optimistic.

The general sales tax accounts for more than half of total state tax collections each year, and for local governments it provides a significant source of revenue for schools and other services. As was the case in previous years, Davidson and Sevier counties had the highest per-capita sales tax collections in the state, with 162% and 196%, respectively, of the statewide average. Ten other counties³ had per-capita taxable sales at or above the state average. In contrast, seven counties had per-capita sales tax collections below 25% of the statewide average.⁴

Per-capita sales tax growth from 1998 to 1999 averaged 5.1% across the state. Twelve counties had growth in per-capita sales tax

² One explanation given for the erratic nature of taxable sales forecasts in general is the lack of reliability of the data. For example, Dr. Fox (CBER) has expressed little confidence in the likelihood that taxable sales really had negative growth in 1998, as the data show.

³ These counties were: Madison, Knox, Williamson, Hamilton, Putnam, Shelby, Hamblen, Coffee, Washington, and Sullivan.

⁴ These counties were: Morgan, Hancock, Moore, Van Buren, Union, Lake, and Jackson.

collections exceeding 10.0%, the top five being Pickett, Wilson, Johnson, Bedford, and Giles. Five counties had negative per-capita taxable sales growth: Unicoi, Anderson, Blount, Dyer, and Hardin.

Unemployment Rate and Job Growth. Like Tennessee, national nonagricultural job growth has been affected by reductions in demand for U.S. exports due to a strong dollar and by the movement of manufacturing jobs overseas. However, the larger-than-average decline in manufacturing jobs in Tennessee and a 1999 national unemployment rate of 4.2% (as compared to 3.6% in Tennessee) suggests that the U.S. as a whole has more room for growth than the Tennessee economy.

CBER expects total nonagricultural employment in Tennessee to grow 1.3% in 1999, 1.4% in 2000, and then nearly back to its high 1998 rate of 2.0% by 2001 (1.9%). Tennessee's

Nonagricultural Job Growth: 1998-2001				
	CBER Forecast			
	1998	1999	2000	2001
Tennessee	2.0%	1.3%	1.4%	1.9%
U.S.	2.6%	2.2%	1.2%	1.2%

Table 10

nonfarm employment growth was among the highest in the Southeast in the early 1990s, but it dropped below the Southeast average in the latter part of the decade.

Map 3 shows average unemployment in Tennessee counties in 1999. The statewide average unemployment in that year was 4.0%. The highest unemployment statewide was in Wayne County, which had 13.8% unemployment, followed by Clay, Lawrence, and Fentress, which were all above ten percent. Eight counties had unemployment below 3%, with Williamson the lowest in the state at 2.0%.⁵

Map 4 shows the change in average unemployment from 1998 to 1999. On average, statewide unemployment dropped from 4.2% to 4.0% during that period. The biggest declines in unemployment were in Trousdale County (-3.7%), Lake (-3.3), and Hardeman (-2.5%) counties. The biggest increases in unemployment were in Lawrence (2.3%), Johnson (2.2%), and Scott (1.7%) counties.

⁵ The other seven counties were: Cheatham, Moore, Knox, Sumner, Rutherford, Wilson, and Davidson.

Conclusions

Reliability of CBER Forecasts

CBER's forecast of 5.0% growth in Tennessee nominal personal income for 1999 appears reasonable, given the record of recent years and national trends, and it may even be slightly conservative. The U.S. forecasts used by CBER to some degree in its Tennessee forecast model, appear conservative compared to other U.S. forecasts. CBER (WEFA) forecasts for U.S. inflation and nominal GDP growth are the lowest of the sampled forecasts, and similarly the CBER (WEFA) forecast for U.S. unemployment is the highest of the sampled forecasts.

Long-term Revenue Growth

In light of recent tax and budget discussions, it is worth emphasizing the projections for and relationship between personal income growth and taxable sales growth in Tennessee. Wages and salaries comprise the largest share of personal income in Tennessee, approximately 60% of total personal income. Wages and salaries are also the most stable components of personal income growth, and are expected to grow between 5.5% and 6.0% per year, on average, for the next decade and 5.0% to 5.5% in the coming two years. In contrast, taxable sales have historically grown (and are expected to grow) approximately 80-85% as fast as personal income, suggesting taxable sales growth of 4.5% to 5.0% per year, on average.⁶

Geographic Distribution of Economic Trends

Despite concerns over the reliability of county-level data, the distribution of economic indicators and trends across the state represent, to some degree, a distribution of some current and future spending needs. Though average unemployment in Tennessee overall is relatively low and stable, the distribution reveals a number of counties with extremely high unemployment, and many of these have a low likelihood of job creation in the near future. Economic development spending, such as the education and other workforce training emphasized by CBER in this and past reports, may need to be more heavily concentrated in those areas than in other parts of the state.

⁶ Of course, taxable sales and sales tax collections are not the same. Collections may not grow as fast as taxable sales, particularly if internet sales, shift to non-taxed services, and other leakage factors continue to erode the tax base.

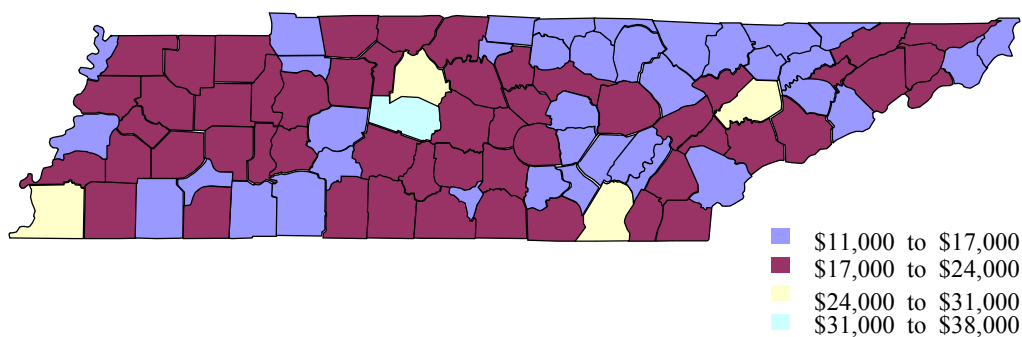
Uncertainties

Although the most recent quarter's national data revealed a growth spurt in the residential housing market, this year's indicators as well as forecasts for the coming two years' economic performance suggest an overall slow-down in the housing market. Often, housing starts are an indicator of coming overall economic performance. Recent stock market jitters are also a possible indicator of a reduction of the "irrational exuberance" that has fueled the longest expansion the United States (and Tennessee) have seen. Revenue projections should be made with an eye toward these and other indicators and a recognition of other economic uncertainties.

Appendix A
Maps

Map 1

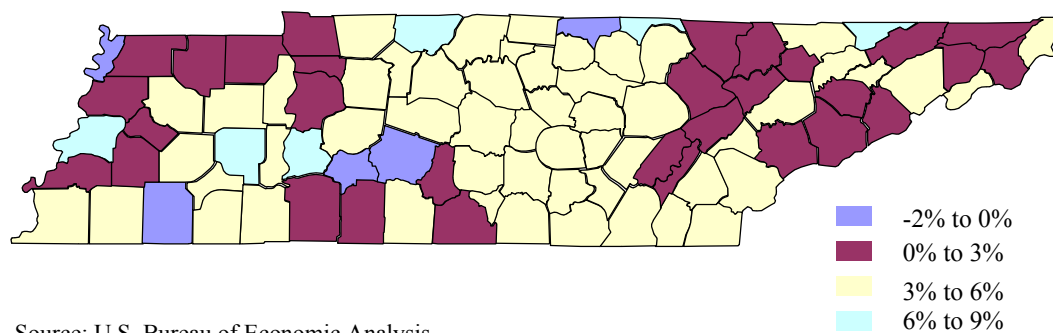
Per-Capita Nominal Personal Income:
1997



Source: U.S. Bureau of Economic Analysis

Map 2

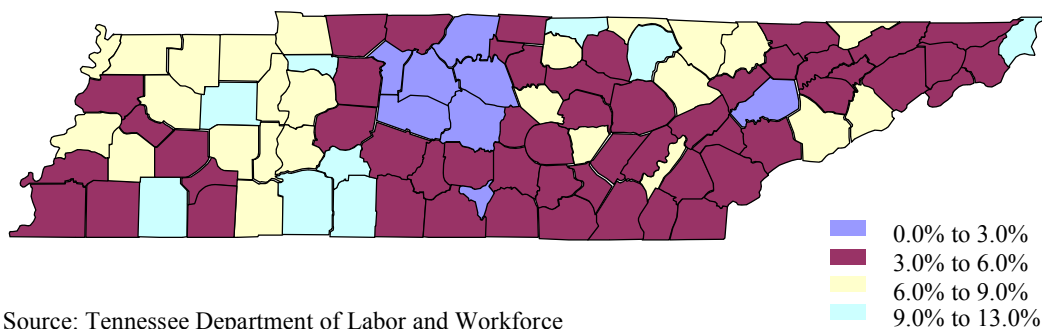
Per-Capita Nominal Personal Income
Growth: 1996-1997



Source: U.S. Bureau of Economic Analysis

Map 3

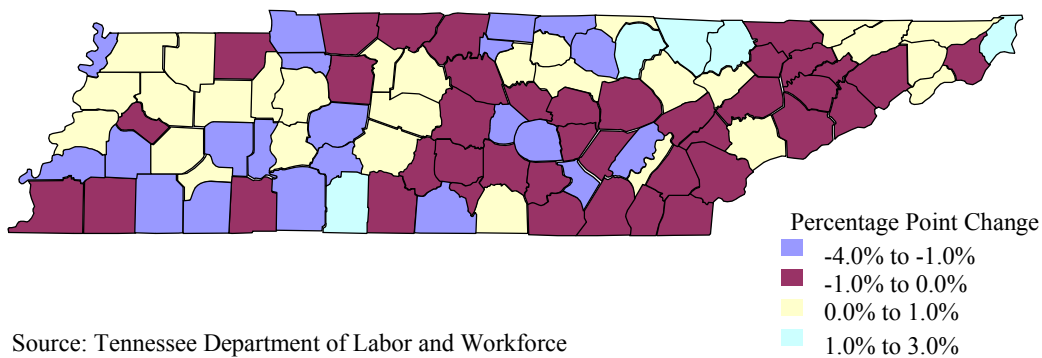
Average Unemployment Rate: January, 1999



Source: Tennessee Department of Labor and Workforce Development

Map 4

Change in the Average Unemployment Rate: January, 1998 - January, 1999



Source: Tennessee Department of Labor and Workforce Development

Appendix B

Statutory Requirements

Tennessee Constitution

Article II, §24 (excerpt)

In no year shall the rate of growth of appropriations from state tax revenues exceed the estimated rate of growth of the state's economy as determined by law.

TCA §9-4-5201

(a) The estimated rate of growth of the state's economy shall be based upon the projected change in Tennessee personal income.

(b) Tennessee personal income shall consist of those sources of income included in the United States department of commerce's definition of "personal income."

TCA §9-4-5202

(a) At least once each year, and whenever requested to do so by the commissioner of finance and administration or by the joint request of the chairs of the finance, ways and means committees of the senate and house of representatives, the state funding board shall secure from the Tennessee econometric model a report of the estimated rate of growth of the state's economy. such report shall include the major assumptions and the methodology used in arriving at such estimate.

(b) Upon receiving the report specified in subsection (a), the state funding board shall make comments relating to the reasonableness of the estimate, including any different estimate the board deems necessary. The board shall also enclose a list identifying state tax revenue sources and non-tax revenue sources, approved by the attorney general and reporter. The department of finance and administration shall provide to the board revenue estimates for each source.

(c) In the event data from Tennessee econometric model is unavailable, the funding board, after consulting with the finance, ways and means committees of the senate and house of representatives, shall obtain and/or prepare a report of the estimated rate of growth of the state's economy.

(d) The reports specified in subsections (a), (b) and (c) shall be forwarded to the commissioner of finance and administration and to each

member of the general assembly, after review and definitive comment by the finance, ways and means committees of the senate and house of representatives.

(e)(1) In November of each year, the state funding board shall conduct public hearings to develop consensus estimates of state revenue for the upcoming fiscal year, as well as any revisions to the current fiscal year estimates, as the board deems appropriate.

(2) The funding board shall request economic forecasts and revenue estimates from representatives of state higher education institution business centers located in each of the grand divisions and such other groups or persons as the funding board deems appropriate.

(3) On December 1, or as soon thereafter as practical, the funding board shall present its state revenue estimates, along with a summary of the economic forecast upon which the estimates are based, to the governor and the chairs of the senate and house finance, ways and means committees. If, in the opinion of the funding board, circumstances warrant a review of state revenue estimates it has previously presented, or upon a request of the chairs, the funding board shall consider information it deems necessary and appropriate and may revise its state revenue estimates if appropriate. Any revision to its revenue estimates and reasons therefore shall be forwarded to the governor and chairs.

TCA §9-4-5203 (excerpt)

(c) When in any budget document the percentage increase of recommended appropriations from state tax revenues exceeds the percentage increase of estimated Tennessee personal income as defined in § 9-4-5201, for the ensuing fiscal year, the governor shall submit a bill or bills for introduction in both houses of the general assembly which shall contain no other subject matter and shall set forth the dollar and percentage by which the estimated growth of the state's economy is exceeded by the appropriations of state tax revenue in accordance with article II, § 24 of the Constitution of Tennessee.

(d) When the percentage increase of appropriations of state tax revenue by the general assembly exceeds the percentage increase of estimated Tennessee personal income as defined in § 9-4-5201, for the ensuing fiscal year, the general assembly shall by law containing no other subject matter, set forth the dollar and the percentage by which the estimated growth of the state's economy is exceeded by the appropriations of state tax revenue in accordance with article II, § 24 of the Constitution of Tennessee.

Appendix C

Years in which Appropriations have Exceeded Growth⁷

Fiscal Year 1984-1985	\$396,100,000	14.60 %
Fiscal Year 1985-1986	\$58,000,000	1.79 %
Fiscal Year 1986-1987	\$100,000,000	2.76 %
Fiscal Year 1988-1989	\$101,000,000	2.38 %
Fiscal Year 1989-1990	\$74,000,000	1.59 %
Fiscal Year 1991-1992	\$703,100,000	15.09 %
Fiscal Year 1992-1993	\$450,000,000	8.69 %
Fiscal Year 1996-1997	\$55,000,000	0.84%
Fiscal Year 1999-2000	\$189,000,000	2.13%

Appendix D

Personal Income Definition

Personal income is a measure of income received by individuals, unincorporated businesses, and non-profit organizations. While it is an important measure of economic activity, personal income is not limited to the wages and salaries of persons. For purposes of establishing this category, the Bureau of Economic Analysis of the U.S. Department of Commerce defines persons as “. . . individuals, non-profit institutions, private non-insured welfare funds, and private trust funds”

The components of personal income include:

- wage and salary disbursements;
- other labor income, including employer contributions for private insurance and retirement programs;
- proprietors' income, which consists of net income of sole proprietorships and non-incorporated businesses;
- rental income, personal interest income, dividends and royalties;
- transfer payments by businesses and government, corporate gifts to non-profit institutions, and other payments not resulting from current services or production.⁸

⁷ Tennessee Code Annotated § 9-4-5203(e).

⁸ U.S. Department of Commerce, Bureau of Economic Analysis.

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